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DEPARTMENT OF HEALT

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Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

June 19, 2000

Captain Wardell C. Wright Sr.
Commanding Officer
Naval Amphibious Base Little Creek
2600 Tarwawa Court Suite 100
Norfolk, Virginia 23508

Dear Captain Wright:

I wish to thank you and your staff for the cordial welcome and support extended to the Agency for Toxic Substances and Disease Registry (ATSDR) during our visit the week of July 19, 1999 at Naval Amphibious Base, Little Creek in Virginia. In this letter, we list some of the people that made our visit successful and transmit our health consultation summarizing public health issues for follow up.

Your staff's level of organization and ability to obtain documentation to meet our information request was outstanding. This is especially commendable in light of our request for information from a cross section of regulatory programs. The briefing and briefing package provided a credible listing and explanation of the various issues. The reason for the level of our success was due to the outstanding cooperation and technical assistance provided by many individuals at the Naval Amphibious Base Little Creek. Personnel who provided key assistance were: Stephanie McManus (Environmental Director), Kelly Greaser (IR Program Manager, during ATSDR 1999 site visit), Denise Paul (Public Affairs Officer), Tom Shafer (Firing Ranges), Jim Pereau (Drinking Water and water supplies), Brian Lee (NPDES and HRSD permits), Brian Pearce (Air), Kay Duport (Housing, Facility Manager). Personnel from Naval Facilities Engineering Command, Atlantic Division, that provided support included Bob Schirmer (Environmental Engineering, IR Program overview), Bonnie Capitio (Administrative Records).

We would like to express our appreciation to Mary Ann Simmons of the Navy Environmental Health Center (Echelon III Command, Bureau of Medicine and Surgery) who facilitated our visit to your command. She also worked with us and your staff in discussing health issues on a site by site basis. Captain George Kramer, MSC provided additional industrial hygiene support. Additionally, Andrea Lunsford pre-briefed your command on our needs before your staff prepared the briefing and briefing package. Jo Anne McKenzie, David Spelce, Jerry Drewyer, John Bishop and Carlton Davis provided additional support.

Personnel from the Naval Medical Center Portsmouth, Lafayette River Annex that provided additional information relative to their support to your command included: Captain (Select) Gary Rudolph, MC (Information on diver rash and blood lead levels), Chris Jones, Al Oxendine, and Steve Smallet (Industrial Hygiene).

Medical staff from the Admiral Joel T. Boone Clinic that provided information on blood lead levels of families and personnel included HM2 Devinius Wilcox and HM1 Harold Brown.

An excellent in-depth briefing was also provided to our personnel by Robert K. Johnston, Ph.D. (MESO SPAWARSYSCEN San Diego CA (Code D3621E) on watershed issues for naval harbors across the United States. His briefing included Little Creek Harbor watershed and Chesapeake Bay issues that will be considered in the Naval Amphibious Base Little Creek, Public Health Assessment being prepared by ATSDR.

Naval Amphibious Base, Little Creek Issues

The purpose of our site visit was to gather information to determine potential public health concerns that will be evaluated in our public health assessment. From our visit, we identified four issues we will be evaluating further. Those are the following:

1. *Public concern about eating potentially contaminated seafood including blue crab from Little Creek Cove, Desert Cove, and Little Creek Harbor.*

2. *Past, current and future contact, particularly by children, with soils possibly containing lead and other contaminants in residential and recreational areas where grit blasting, landfills, past incinerator operation, or water tower paint removal activities took place.*

3. *Current and future building occupants near the contaminated groundwater locations could be exposed to fuel components and other volatile compounds seeping into the indoor air of the Base Exchange/Commissary or other buildings along the sewer line.*

4. *Past concern by Navy divers of periodic skin rashes associated with occupational, military training and military unique activities.*

These issues were presented to the Navy by ATSDR at the exit briefing the week of July 19, 1999. All are discussed in more detail in the enclosed report. In short, a number of stakeholders (local private citizens, environmental groups, community groups, local state and federal agencies, academia, and industries) have actively been looking at seafood issues in the Chesapeake Bay water and air shed for decades. ATSDR will be consulting with stakeholders to discuss, identify issues and combine information relative to seafood near the base. With regards to the soil lead issue, determination of fate and transport and collection of bioavailability information would help to determine if there are any hazards. At areas near the Base Exchange/Commissary, investigation of possible indoor air pollution should be conducted where appropriate.

ATSDR uses the site visit information to rank the base for a relative hazard and to prioritize our schedule for completing the public health assessment. Based on an examination of the available information, we have ranked Naval Amphibious Base, Little Creek as a Category "C". This ranking is primarily because of possible lead exposures and community concerns about eating locally caught seafood. Category "A" represents the highest hazard and "E" the lowest. We have enclosed a "Note of Explanation" for more information on our ranking process. As a result of the rank and a need for follow-up, we are targeting completion of the public health assessment in the fiscal year 2002. *However, ATSDR believes that the four issues listed should continue to be high priority items.*

We will continue to coordinate with your staff on these issues. If you have any questions, please do not hesitate to contact Charles Grosse at (404) 639-6001. We look forward to working with you and your staff in the future.

Sincerely yours,

for Sandra G. Isaacs, Chief
Federal Facilities Assessment Branch
Division of Health Assessment
and Consultation

Enclosures (2)

cc:
Community RAB Co-Chair (Mr. Walter Vargo)
OIC, BRMEDCLINIC NAVPHIBASE LITTLE CREEK VA
Commander, COMNAVREG MIDLANT NORFOLK VA
Commander, COMNAVREG MIDLANT NORFOLK VA (S McMannus)
Commander, LANTNAVFACENGCOM
LANTNAVFACENGCOM (Code 1822) (B. Schimer)
USACHPPM (K. Buchi)
BUMED (02)
CO, NAVENVHLTHCEN
NAVENVHLTHCEN (A. Lunsford)
MESO SPAWARSYSCEN San Diego CA (Code D3621E)
Division of Waste Programs, VADEQ, Richmond VA (Robert Weld)
EPA Region 3 Philadelphia, PA , Remedial Project Manager (Bruce Beach)
NOAA, Region 3 Philadelphia, PA (P.Knight, 3HS00)
Lead Safe Virginia Program, VDOH (P. Sandman)
Portsmouth Health Department, VDOH (L. Tsgeaw)
ATSDR, Region 3 Philadelphia, PA (T. Stukas, 3HS00)

NOTE OF EXPLANATION OF THE ATSDR SITE RANKING

ATSDR health assessors conduct site visits at all hazardous waste sites that are proposed or listed on the Environmental Protections Agency's National Priorities List (NPL) including Department of Defense facilities. During the site visits, the health assessors collect available data and information to be included in the public health assessment. The information that is collected documents the nature and extent of contamination, identifies site-related health issues of concern to the community, and provides insight into the health status of the community.

Because current resources at ATSDR are inadequate to write public health assessments at all of the Federal facilities listed on the NPL, ATSDR has developed an interim Site Ranking Process (57 FR 37382, August 18, 1992) as a planning tool to identify facilities that pose the greatest hazard to public health. Those sites posing a greater relative hazard to public health will receive public health assessments before sites posing a lesser relative hazard. This action ensures that ATSDR's resources can be directed to the most critical sites first.

Using the interim Site Ranking Process, ATSDR assigns points for contaminated media, populations within one mile, possible human exposures, and community health concerns. The points are totaled to give sites a single numerical score from 0 to 140 points. The 140 point scale is divided into five Site Ranking Categories based on their numerical ranges: Category A - 140 to 80; Category B - 79 to 55; Category C - 54 to 35; Category D - 34 to 20; and Category E - 19 to 0. The higher the score, the greater the relative hazard and, therefore, the higher priority in the public health assessment process.

ATSDR HEALTH CONSULTATION

OUTLINING VARIOUS EXPOSURE ISSUES FROM INITIAL SITE VISIT- July 1999 to NAVAL AMPHIBIOUS BASE, LITTLE CREEK

LITTLE CREEK, VIRGINIA

June 2000

Purpose and Description of Issues

The purpose of this document is to convey issues that Agency for Toxic Substance and Disease Registry (ATSDR) determined need additional data, information, or followup. Between July 19 and July 23, 1999, ATSDR conducted a site visit of Naval Amphibious Base, Little Creek in Virginia. The purpose of the visit was to begin collecting information necessary for conducting a public health assessment, to determine if immediate ATSDR public health actions were needed, and to prioritize the site for future public health activities. We reviewed available site-specific information and visually inspected the designated Installation Restoration Program (IRP) sites or other areas where hazardous substances have been released to the environment to identify any potential public health concerns. Additionally, ATSDR staff met with Navy environmental and health personnel, and representatives of federal, state, and local agencies. As a result of these meetings and a preliminary survey of the data currently available, we identified four issues that we will be investigating further. *Although none of the issues represent an imminent public health threat, ATSDR believes that the four issues listed should continue to be high priority items.*

These issues were presented to the Navy by ATSDR at the exit briefing the week of July 19, 1999. More detail is provided on these issues in the Discussion section of this report.

1. ***Public concern about eating potentially contaminated seafood including blue crab from Little Creek Cove, Desert Cove, and Little Creek Harbor.***

   ATSDR will be consulting with stakeholders to discuss, identify issues and combine information relative to possible seafood contamination near the base. ATSDR would appreciate help in identifying stakeholders with information, concerns, or data relative to the seafood issues or other health issues.

2. ***Past, current and future contact, particularly by children, with soils possibly containing lead and other contaminants in residential and recreational areas where grit blasting, landfills, past incinerator operation, or water tower paint removal activities took place.***

   ATSDR recommends that the Navy perform a fate and transport and lead bioavailability study (i.e., how much lead can be absorbed by people) *within the next year. ATSDR would like to review and comment on any other sampling plans.*

3. ***Current and future building occupants near the contaminated groundwater locations could be exposed to fuel components and other volatile compounds seeping into the indoor air in or around the Base Exchange/Commissary and/or landfills.***

   Since the gases have been detected in confined spaces near the Base Exchange/ Commissary (e.g., sewers), indoor air in nearby buildings or structures in the migration path of the contaminated groundwater or sewer lines with build up of gases , should be

periodically checked/sampled. Landfills and building or equipment that could build up gases around landfills should also be periodically checked/sampled for landfill gases.

4. ***Past concern by Navy divers of periodic skin rashes associated with occupational, military training and military unique activities.***

Current information indicates no apparent public health hazards that impact individuals other than military divers.

Background

Location

The Naval Amphibious Base Little Creek facility is located in the Tidewater region of Virginia, near the mouth of the Chesapeake Bay. The naval base is located within the city limits of Virginia Beach and consists of 2,147 acres. It is surrounded by residential, commercial, industrial, and recreational developments. On the western portion of the naval base are Little Creek Cove and Desert Cove, which empty into Little Creek Channel, and Little Creek Channel, which empties into the Chesapeake Bay. There are several lakes on or adjacent to the naval base, including Lake Bradford, Lake Chubb, Varian Lake, Little Creek Reservoir, Lake Smith Reservoir, and Lake Whitehurst. Overland drainage from the sources at the Little Creek facility flows into Little Creek Cove, Desert Cove, and the Chesapeake Bay. (USEPA, 2000)

History

The Naval Amphibious Base Little Creek grew out of four bases constructed during World War II - the Amphibious Training Base, Naval Frontier Base, and Camps Bradford and Shelton. It consisted of three annexes named for the former owners of the property-Shelton on the east, Bradford in the center, and Whitehurst to the west. A Secretary of the Navy letter in July 1945 disestablished the separate bases and established the Naval Amphibious Base Little Creek with a commissioning date of August 10, 1945. In 1946 Little Creek was designated a permanent base. (USEPA, 2000)

Current Mission

Little Creek personnel provide support services to 27 homeported ships and more than 80 tenant commands. The combination of operational support and training facilities are geared predominantly to expeditionary warfare operations. (USEPA, 2000)

Waste Generating Activities

Operations that have occurred at the Little Creek facility included: vehicle and boat maintenance, boat painting and sandblasting, construction and repair of buildings and piers,

mixing and application of pesticides, electroplating of musical instruments, laundry and dry cleaning, medical and dental treatment, and generation of steam for heat. (USEPA, 2000) (

Wastes that have been generated and disposed at the Naval Amphibious Base Little Creek facility include: pesticides, paints solvents, inorganics, heavy metals, polychlorinated biphenyls (PCB), mixed municipal wastes, nickel plating baths, chromic acid, silver cyanide, copper cyanide, lacquer, lacquer stripper, perchloroethylene, sludge, soap, dyes, and degreasers (USEPA, 1999)

The seven sources that were evaluated for ranking the site for listing on the National Priority List (NPL) were the Naval Amphibious Base Landfill, Driving Range Landfill, Sewage Treatment Plant Landfill, School of Music Plating Shop Contaminated Soil and Debris, School of Music Plating Shop Neutralization Tank, Exchange Laundry Waste Disposal Area, and the PCP Dip Tank and Wash Rack Area. (USEPA, 2000) The site was formally added to the NPL on May 10, 1999. (USEPA, 2000) The basis for the NPL listing was the Surface Water Overland /Flood Migration Component and Surface water Migration Pathway Score. (USEPA, 1998, 1999) Contaminants migrating from the facility have impacted or might impact fisheries and sensitive environments located downgradient of the facility.

In addition to the areas used for listing on the NPL, there are more than 140 other potential Solid Waste Management Units (SWMU) and nine (9) additional Areas of Concern (AOC). ATSDR will review new information on those areas as well.

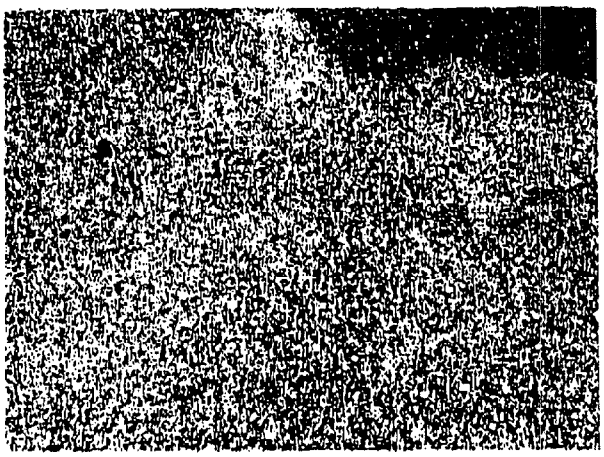
Discussion

1. ***Public concern about eating potentially contaminated seafood including blue crab from Little Creek Cove, Desert Cove, and Little Creek Harbor.***

   Potential sources of contamination to seafood include the shipyard, other NPL sites, and associated regional and local point and non-point sources from surrounding residential, urban, and industrial areas. ATSDR realizes that a number of stakeholders (local private citizens, environmental groups, community groups, local state and federal agencies, academia, and industries) have actively been looking at seafood issues in the Chesapeake Bay water and air shed for decades. *ATSDR will be consulting with stakeholders to discuss, identify issues and combine information relative to possible seafood contamination near the Naval Amphibious Base, Little Creek.* ATSDR would appreciate help in identifying stakeholders with information, concerns, or data relative to the seafood issues or other health issues.

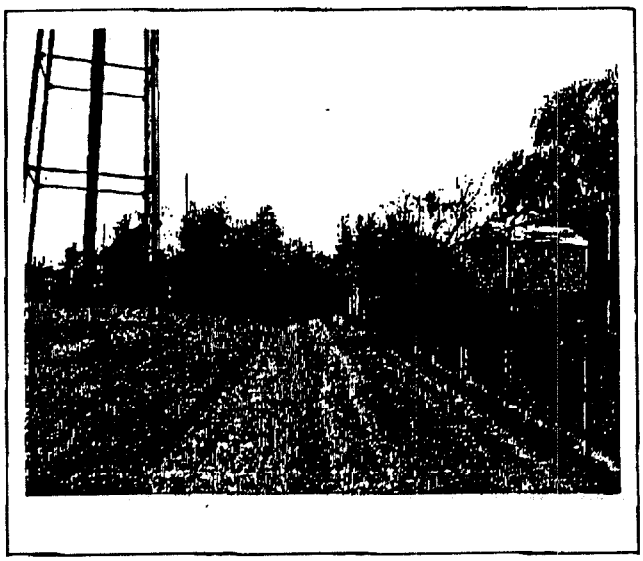
2. ***Past, current and future contact, particularly by children, with soils possibly containing lead and other contaminants in residential and recreational areas where grit blasting, landfills, past incinerator operation, or water tower paint removal activities took place.***

There are several areas where children have access with possible contamination. Those areas include:



– Areas with Grit Blasting:
  - SWMU 3, Pier 10 Sandblast Yard
  - SWMU 5, Building 3986 Boat Painting Area
  - SWMU 6, Seabee Area
  - SWMU 7, Desert Cove Sandblasting Area
  - SWMU 8, West Annex Sandblasting Area

(In addition to lead, grit blast often contains chromates and other materials in paints.)



– Area under three water towers where paint was removed since the 1940s and 1950s.

- Historical multimedia releases from operations and landfills:
  - Site 7, Amphibious Landfill - runoff and drainage leads to Little Creek Cove
  - Site 9, Driving Range Landfill - runoff and groundwater movement towards Chesapeake Bay Shoreline and Desert Cove
  - Site 10, Sewage Treatment Landfill Drainage - runoff and groundwater movement towards Chesapeake Bay Shoreline and Desert Cove
  - Historical Incinerator Emissions toward Chesapeake Bay shoreline
  - Site 11, School of Music Instrument Plating Shop - runoff and groundwater movement towards Chesapeake Bay Shoreline and Desert Cove
  - Site 12, Historical Exchange Laundry Waste Disposal Area (current commissary and carwash) - runoff and groundwater movement towards Chesapeake Bay Shoreline and Desert Cove
  - Site 13, Public Works PCP Dip Tank and Wash Rack - TCE and PCP groundwater plumes. Runoff and groundwater movement towards Chesapeake Bay Shoreline and Desert Cove
  - Salvage and ship maintenance, base operations, dredging activities, fueling operations, corrosion control activities, etc

In some areas, for example the grit blasting areas, the soil lead levels could be quite high. *ATSDR recommends that the Navy perform a fate and transport and lead bioavailability study (i.e., how much lead can be absorbed by people) within the next year. Bioavailability of lead may be reduced by age/weathering, clay types, organic material, and soil acidity levels. ATSDR would like to review and comment on any other sampling plans.*

3. ***Current and future building occupants near the contaminated groundwater locations could be exposed to fuel components and other volatile compounds seeping into the indoor air in or around the Base Exchange/Commissary.***

Before construction of the Base Exchange/Commissary, soil gases were found in surface and subsurface soils. A passive gas removal system was installed as part of the new construction. The system is reportedly designed so that gases will build up in the coarse gravel/rock under the building. The gases can then move through a series of pipes in the gravel to pipes that passively release gas on the top of the building. The contamination in the underground water is moving toward a cracked sanitary sewer. *Since the gases have been detected in confined spaces (e.g., sewers), indoor air in nearby buildings or structures in the migration path of the groundwater or along the sewer line should be periodically checked/sampled.* Additionally, landfill gas migration from several landfills has not been characterized and could impact indoor air. *Landfill gases should be periodically checked/sampled.* (Personal communication Greaser, 1999, Schirmer, 1998, NAB Little Creek Commissary, Diagram Under Slab Venting, 1992.)

4. ***Past concern by Navy divers of periodic skin rashes associated with occupational, military training and military unique activities.***

   Reports of periodic skin rashes of short to medium duration reported by Navy divers. The rashes appear to be only associated with occupational, military training and military unique activities. Current information indicates there are no apparent public health hazards that impact individuals other than military divers. *There have been no reports of rashes during recreational or residential activities such as swimming in (on and off-base) marinas during cleaning of the bottoms of boats or swimming on beaches along the Chesapeake Bay.* (CDR Gary Rudolph, MC Personal Communication 1999)

Community Participation in the Public Health Assessment Process

ATSDR is working with the Navy to identify any remaining hazards. Because of the excellent cooperation we received and the fact that available information is already organized, our evaluation should be less complicated. ATSDR believes that community involvement is invaluable and would appreciate community assistance. RAB members and other members of the community can assist by identifying community health concerns. Community members can also assist by identifying stakeholders that may have information such as effectiveness of the land use restrictions and fishing bans, frequency and consumption of seafood, and seafood sampling data. ATSDR has reviewed newspaper articles, RAB minutes, and other documents at the Central Library on Virginia Beach Boulevard, the library on the Naval Amphibious Base, Little Creek, and some USEPA records.

RAB members and others may also contact ATSDR toll-free and leave a voice message at **1-888-42 ATSDR (extension) 6094.** We request that you refer to "Little Creek Amphibious Base" and leave your name and a return phone number.

Conclusions and Recommendations

ATSDR did <u>not</u> identify issues that posed an imminent public health threat, but did identify issues, including the four listed above, for which additional data, information, or followup is needed. Specific recommendations and timeframe for followup are listed with each issue.

References:

ATSDR Site Visit Photos, Naval Amphibious Base Little Creek, Copy on File ATSDR, 1999.

Bob Schirmer, May 11, 1998. Subject 9d0142 Little Creek Comissary, email to Scott MacEwen and Kelly Greaser, {online] . Schirmer, Bob G. [SchirmerRG@efdlant.navfac.navy.mil]. Copy on File ATSDR, 1999.

CDR Gary Rudolph, MC , Naval Medical Center Portsmouth, Lafayette River Annex; Personal Communication 1999.

Kelly Greaser (IR Program Manager) NAB Little Creek, Personal Communication 1999.

NAB Little Creek Commissary N62470-90 C-0142. Diagram Under Slab Venting SK-E-73-92, February 14, 1992. Partial Copy on File ATSDR, 1999.

United States Environmental Protection Agency, Naval Amphibious Base Little Creek Hazard Ranking System Documentation Record, EPA Identification number VA5170022482, 1998.

United States Environmental Protection Agency, NPL- FRU24-5-R, NPL Revised HRS Scoring Package, May 1999)

United States Environmental Protection Agency [Web Page] May 2000
http://www.epa.gov/reg3hwmd/super/navamp/pad.htm [Accessed June 2000]

Documents Reviewed

All documents in the Central Library information repository for Naval Amphibious Base, Little Creek.

APPENDIX A:

Site Specific Information

Service: United States Navy
Size: 2,147 acres
Installation Status: Active
Installation Mission: Little Creek personnel provide support services to 27 homeported ships and more than 80 tenant commands. The combination of operational support and training facilities are geared predominantly to expeditionary warfare operations.

ATSDR Action Dates

Initial Site Visit: July 19-23, 1999
RAB/Other Meetings: None

Persons Met With:

Naval Amphibious Base Little Creek
Stephanie McManus (Environmental Director)
Denise Paul (Public Affairs Officer)
Kelly Greeaser (Installation Restoration Program Manager)
Tom Shafer(Environmental Team Leader)
Jim Pereau (Drinking Water Manager)
Brian Lee (NPDES and HRSD Permit Manager)
Brian Pearce (Air Manager)

Naval Facilities Engineering Command, Atlantic Division
Bob Schimer, P.E. Code 1822, (Remedial Project Manager)
Ken Clark (Environmental Engineer)
Bonnie Capitio

Admiral Joel T. Boone Medical Clinic
HM2 Devinius Wilcox
HM1 Harold Brown

Naval Medical Center Portsmouth, Lafayette River Annex
Captain (Select) Gary Rudolph, MC (Information on Diver Rash and Blood Lead Levels),
Chris Jones (Industrial Hygiene);
Al Oxendine (Industrial Hygiene);
Steve Smallet (Industrial Hygiene)

Navy Environmental Health Center
Mary Ann Simmons (Industrial Hygienist)

Jo Anne McKenzie (Administrative)
Captain George Kramer, MSC (Director Industrial Hygiene)
David Spelce, (Industrial Hygiene)
Jerry Drewyer, (Material Safety Data Sheets)
John Bishop (Industrial Hygiene)

(MESO SPAWARSYSCEN San Diego CA (Code D3621E)
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Agency for Toxic Substances and Disease Registry, Region III, Philadelphia
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USEPA, ERT (Dr. David Charters)
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NAVENVHLTHCEN (Mary Ann Simmons)
Director Environmental Programs, NAVENVHLTHCEN
NAVFACENGCOM (Teresa Bernhard)
Ellen Barns (NAB Little Creek, Repository),Bayside Area Library
Susan Zwick (NAB Little Creek, Repository), Central Library
Peggy Hasel (NAB Little Creek, Repository), Little Creek Library
Rene Maynard (NAB Little Creek, Repository), NAB Little Creek Library
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